On the case and possible origin of double human inhumation in the backyard of a private house in the city of Tver

• Zinoviev AV •

Zoology Division, Tver State University

Address for correspondence:
Andrei V. Zinoviev
Tver State University
Faculty of Biology, Zoology Division
Chaikovskogo pr. 70a
170002 Tver, Russia
E-mail: m000258@tversu.ru

Bull Int Assoc Paleodont. 2009; 3(1):10-19.

Abstract

The buried remains of two women found in the backyard of a private house in the city of Tver, Russia, have been investigated. Although both deceased have been buried without coffins and under the floor of a wooden building, their skeletal remains do not show any traces of criminal misconduct leading to their death. The results of the examination performed on both skeletons and accompanying archaeological material suggest that both women most probably died of natural causes during the occupation of Tver by German troops from October to December, 1941.

Keywords: Archaeoanthropology; World War II; Occupation; Burial; Tver

Introduction

The skeletal remains of two individuals were discovered during the course of archaeological excavation carried out by the Tver Archaeological Research and Restoration Centre in the city of Tver (Figure 1) in 2008. The position of the burial site outside of the cemetery, in the backyard of a private house, as well as the absence of coffins, raises a number of questions. The present study provides the answers to some of these questions by combining anthropological studies with available archaeological data.

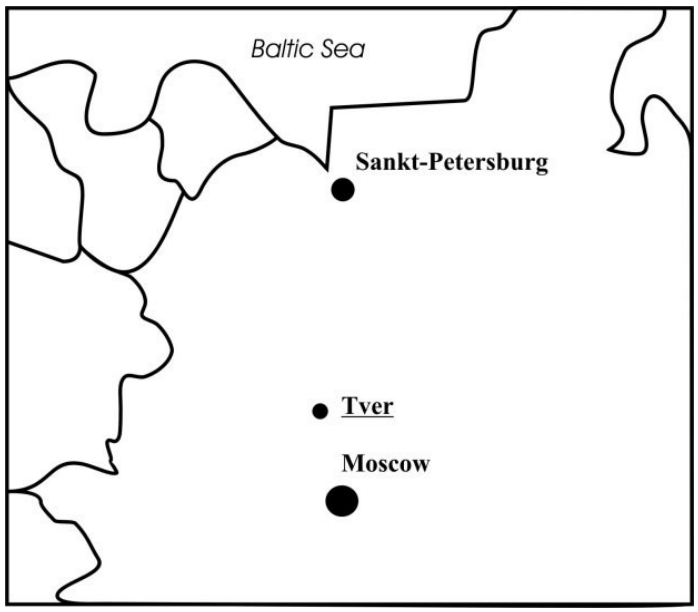

Figure 1. Location of Tver in European Russia

Materials and methods

Two almost completely well-preserved human skeletons were available for the study (Figure 2, Figure 3). The skeletons were discovered in a pit, dug out under the floor of a former wooden building in the backyard of a private house. The heads were buried towards the east, with hands crossed across the chest; both carcasses were once wrapped in pieces of fabric. The wrapping of the first body was completely decayed, leaving cherry-colored traces in the adjacent soil. The second body was wrapped in some sort of artificial material, most likely in leatherette, traces of which were still visible on various parts of the skeleton (Figure 4 A, D). Coffins were missing in both cases. The burial pit was filled with soil, containing various debris items dating from the 19th century to the first half of the 20th century.

The age of the buried individuals was determined by a combination of several methods, using cranial (1-8) and postcranial features (9-18). The reliability of each particular method has been taken into account (19).

The stature estimation was based on a number of methods, provided by Alekseev (1). To check the results several other methods were applied (13, 20-28). An original computer program named “Stature of Buried” (2007), developed at the Physics-Technical Faculty of Tver State University, has been used to find the optimal value for the stature of buried individuals.

The skeletons were sexed using well-preserved pelvic bones (29, 30) together with other morphological characteristics (24).

The skeletons in Figures 1 and 2 were vectorized by the author in Corel-Draw 10. Forms for vectorization were generously provided by Thierry Vette (France).

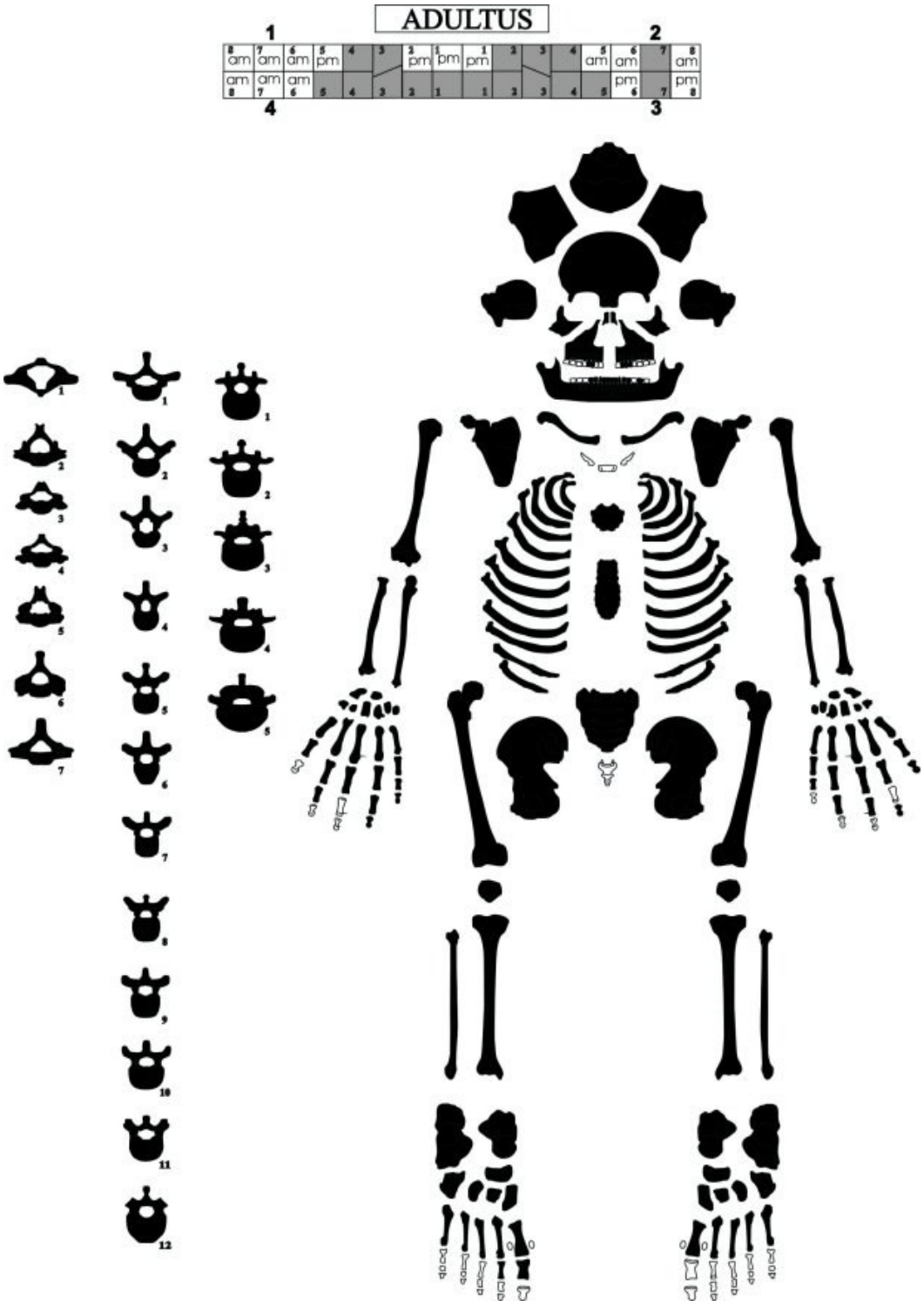

Figure 2. Skeleton No. 1 Bones available for study have been marked black; am – teeth fallen out antemortem, pm – teeth fallen out postmortem

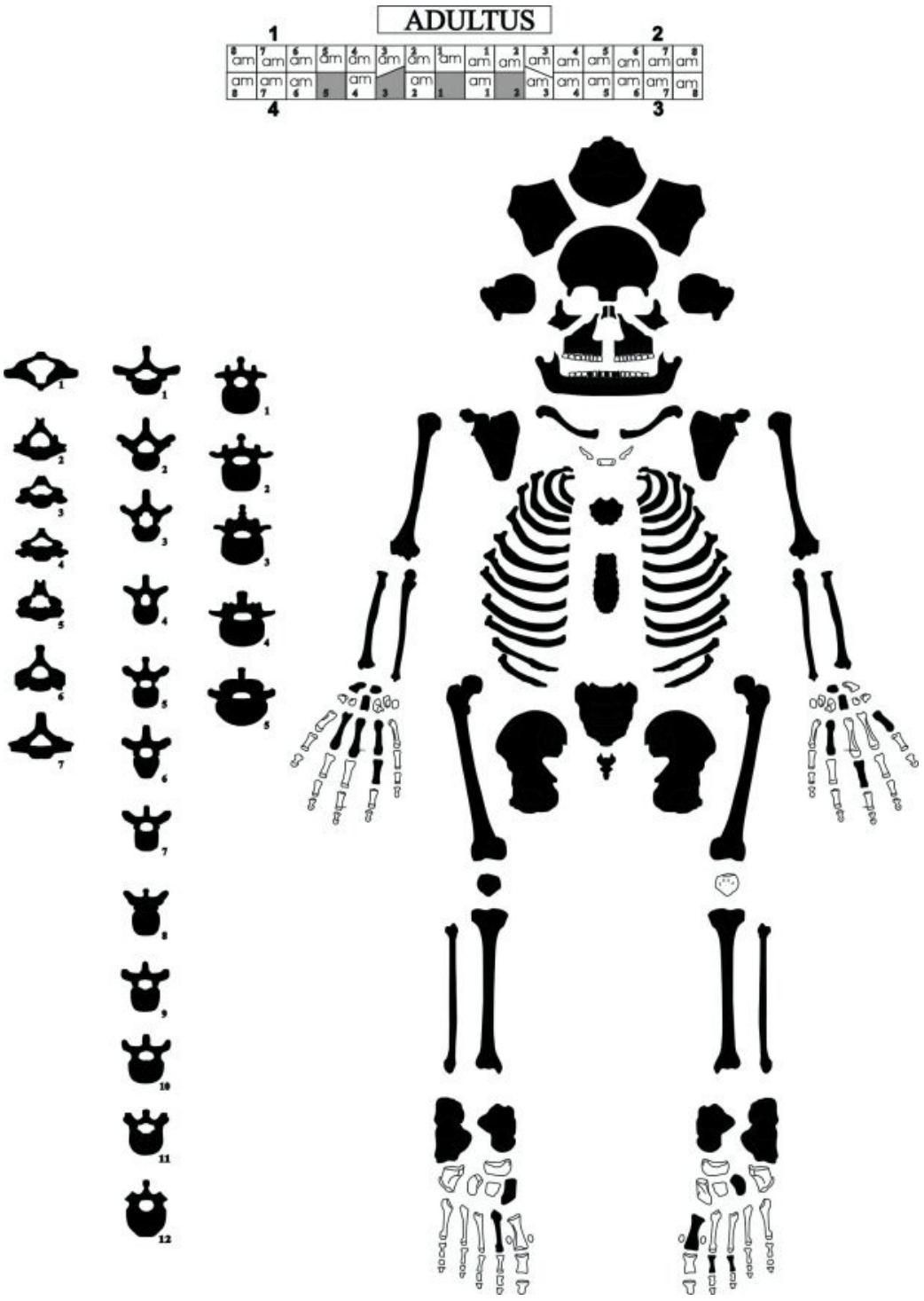

Figure 3. Skeleton No. 2 Bones available for study have been marked black; am – teeth fallen out antemortem, pm – teeth fallen out postmortem

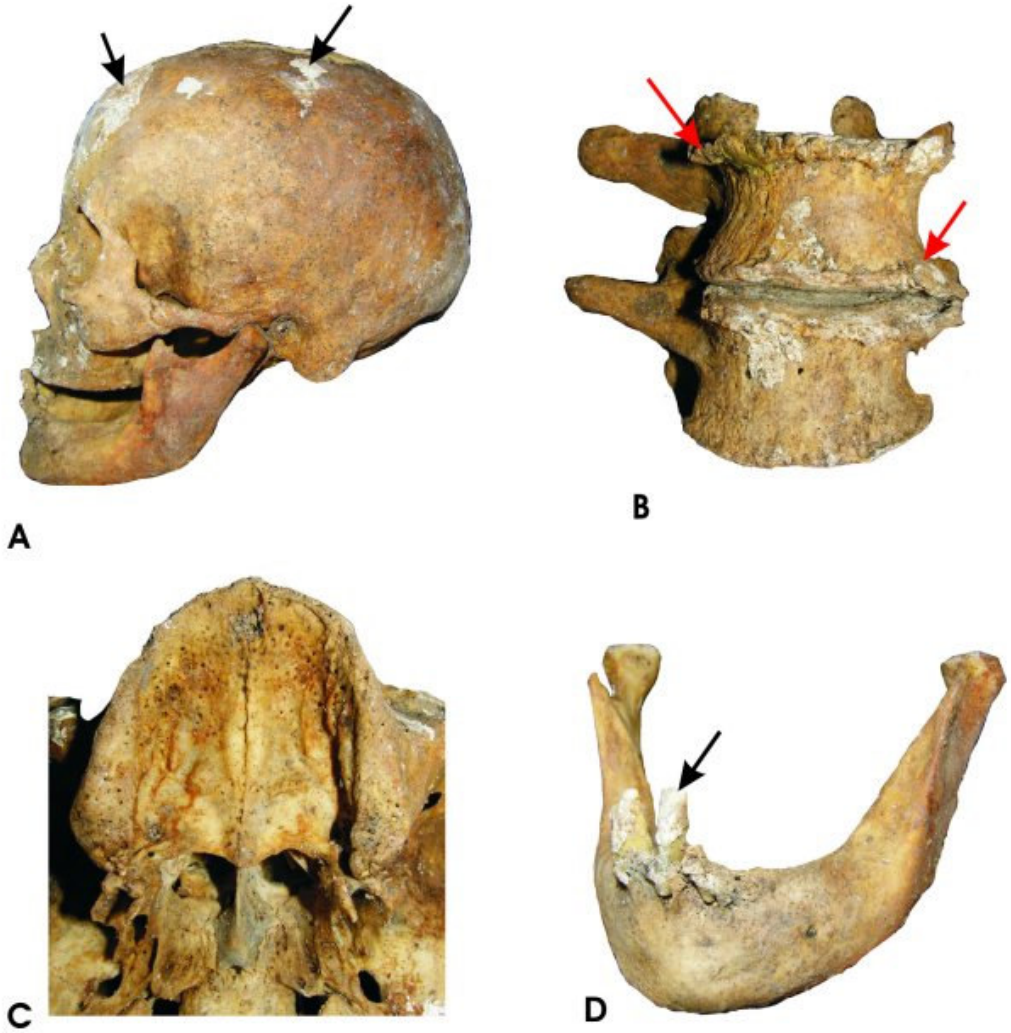

Figure 4. Skeleton No. 2 A – left sided view of the skull; B –two lumbar vertebrae; C – view of the masticatory surface of the upper jaw; D – lower jaw viewed anterolaterally. Black arrows indicate remnants of leatherette, which had been wrapped around the carcass. Red arrows indicate traces of senile arthropathy.

Results

Both skeletons belong to women. The general data on them is presented in Table 1:

Table 1. General data on buried individuals

No. of skeleton	Sex	Age (years)	Age group	Stature (± 0,2 cm)
1	Female	45-55	Maturus	158,9
2	Female	70-75	Senilis	152,9

Skeleton 1 (Figure 5). The skeleton of the mature woman has caused certain difficulties in determining her age at the time of death. Tooth wear and the closure of ectocranial sutures have been pointed out on this younger individual, while postcranial features (development of osteophytes, rugged joint surfaces) revealed an older age. Taking this into consideration we expanded the individual's possible age range. Most likely, hard life and diseases caused premature ageing of the postcranial skeleton. Nine teeth belonging to this buried woman at this site had fallen out prior to the death (Figures 2, 5 A, C); most of the others show caries and pronounced dental calculus (Figure 5 C, E). The gums under the calculus were inflamed, causing periodontitis. The lower incisors, canines and premolars bear two hypoplastic lines (Figure 5E). Formed during childhood, these lines revealing arrested dental growth indicate a metabolic stress, often caused by disease or starvation (31). Reid and Dean's method (32), considered the most precise (33), indicates that the woman in question had experienced stressful events between the ages of slightly over three and four years. The earlier possible stresses cannot be determined due to the tooth wear. Age changes are especially well-manifested in the vertebral column. Lastly, thoracic and lumbar vertebrae show signs of pronounced arthropathy (Figure 5F). The first ribs are fused with the manubrium sterni (Figure 5D). A longer and more powerful skeleton of the right hand indicates the woman's right-handedness. There were two wormian bones in her skull's sutura lambdoidea (Figure 5B). This configuration has only once been recorded for those buried in the city of Tver (34), and thus can be considered rare. The bones displayed no trace of violent death.

Skeleton 2 (Figure 4). Age estimation for this woman was not as complicated as in the previous case. Despite the lack of almost all of the teeth (Figure 4A,C,D), obliteration of the ectocranial sutures, joint surfaces of long bones, first ribs, pubic and sacroiliac symphyses indicates age at time of death somewhere between 70 and 75 years. The postcranial skeleton of this woman, belonging to the senilis age category, bears traces of arthropathic changes, especially pronounced in thoracic and lumbar regions of the vertebral column (Figure 4B). These changes are only slightly more progressive than in the significantly younger woman described as Skeleton 1 in this study. There are no skeletal traces of violent death in this case, either.

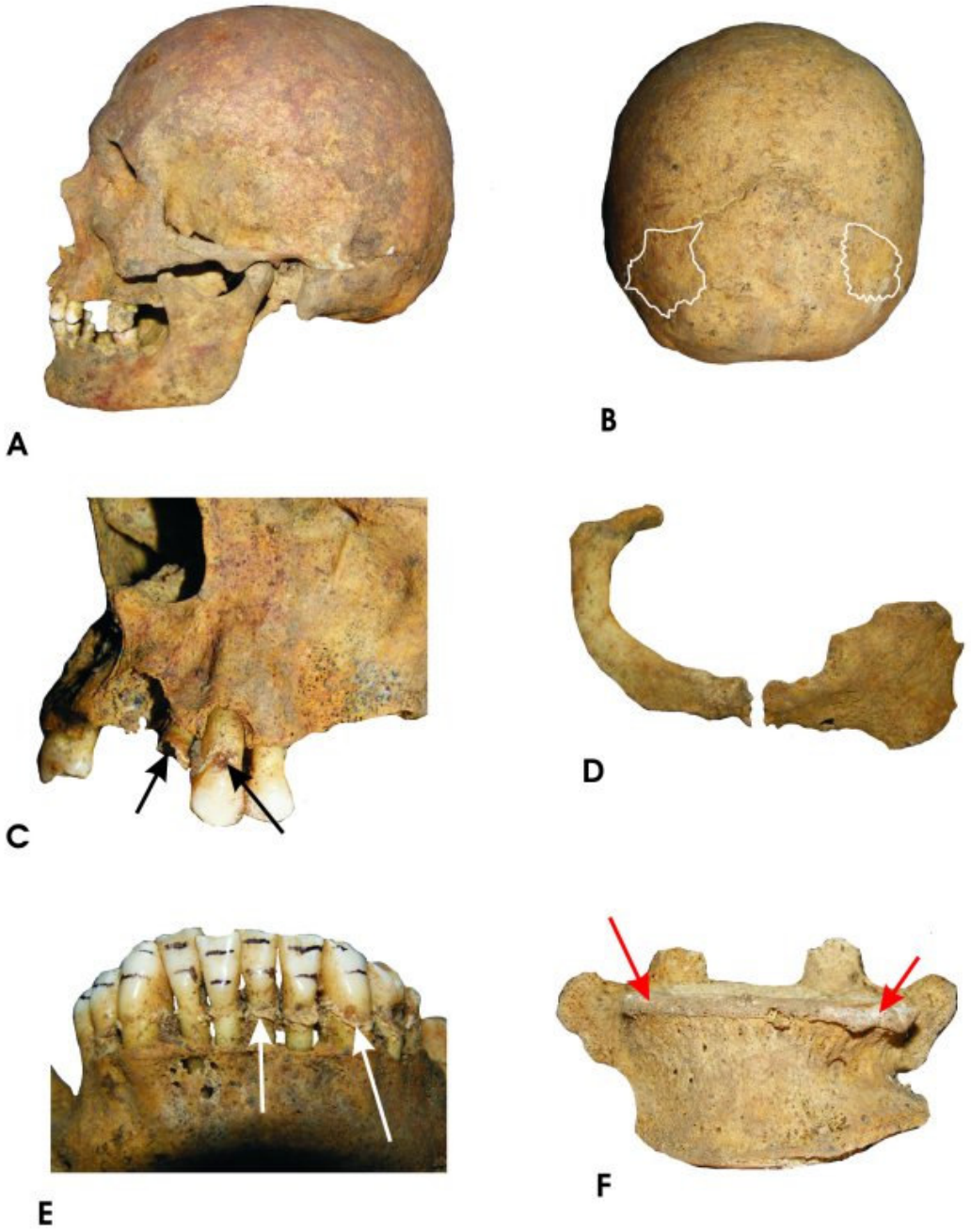

Figure 5. Skeleton No. 1 A – skull from the left; B – occipital view of the neurocranium (wormian bones are outlined in white); C – maxilla anterolaterally; D – manubrium sterni fused with first rib (broken off postmortem); E –anerior view of lower jaw (hypoplastic lines are marked with ink); F – lumbar vertebra. Black arrows show caries; white ones– dental calculus; red ones – arthropathic changes.

Discussion

The position in which the skeletons were found indicates partial utilization of a burial ritual. This fact and the absence of violent marks on the remains reject possible criminal origin of the skeletons. Thus the absence of coffins and strange position of burial in the backyard of a private house may indicate that the regular funeral ceremony could not be completed. This situation took place during occupation of Tver (formerly Kalinin) by German troops (Oct. 15th– Dec. 16th, 1941) during the Second World War. Due to the curfew restrictions, all the citizens were resettled to the downtown are and were forbidden to leave it. In this case most of the deceased were buried secretly in backyards or even under the floorboards of houses lived in. Both women in question may have died of natural causes; the first one due to old astronomical age, while the second one may have died due to biologically old age, caused by metabolic problems first experienced as early as in childhood. The stress brought on by the German occupation of Tver might have been the last straw, which sped up the death of these two women.

The head-to-east orientation of the carcasses is surprising and contradicts the funeral customs practised by the followers of the Orthodox, Muslim and Jewish faiths. Most likely, the burial was conducted by someone rather unfamiliar with funeral rites.

Conclusion

This study indicates that the burial of two women in the backyard of a private house in downtown Tver was carried out in secret and with only partial knowledge of funeral rituals. Results from the examination of the skeletons and accompanying archaeological material suggest that both women most likely perished due to natural causes during the occupation of Tver by German troops from October to December 1941. The stress brought on by the occupation may have sped up their demise, especially that of the younger individual.

Acknowledgements

I am grateful to Olga Evgenievna Rybakova (Tver Archaeological Research and Restoration Centre), who provided the material for the present study. This study was made possible by Aleksandr Nikolaevich Khokhlov, the Chief of the mentioned Centre.

References

1. Demirjian A, Goldstein H, Tanner JM. A new system of dental age assessment. Hum Biol. 1973 May;45(2):211-27.
2. Johanson G. Age determinations from human teeth. Odontologisk Revy. 1971;22:1-126.
3. Lampe H, Roetzscher K. Forensic odontology: age determination from adult human teeth. Med Law. 1994;13(7-8):623-8.
4. Iscan M. Age markers in the human skeleton. Springfield, Ill.: Charles C. Thomas; 1989.
5. Miles AE. The assessment of age from the dentition. Proc R Soc Med. 1958 Dec;51(12):1057-60.

6. Solheim T. A new method for dental age estimation in adults. Forensic Sci Int. 1993 May;59(2):137-47.
7. Kelley MA, Larsen CS. Advances in dental anthropology. New York ; Chichester: Wiley-Liss; 1991.
8. Zvyagin V. Age morphology of human cranial sutures (to the methods of age forensic age determination) - dissertation. Moscow 1971.
9. Alekseev VP. Osteometriya : metodika antropologicheskikh issledovanii. Moskva: "Nauka"; 1966.
10. Bass WM. Human osteology : a laboratory and field manual. 4th ed. ed. Columbia, Mo.: Missouri Archaeological Society; 1995.
11. Brooks ST. Skeletal age at death: the reliability of cranial and pubic age indicators. Am J Phys Anthropol. 1955 Dec;13(4):567-97.
12. Buikstra JEE, Ubelaker DHE. Standards for data collection from human skeletal remains: Arkansas Archeological Survey; 1994.
13. De Mendonca MC. Estimation of height from the length of long bones in a Portuguese adult population. Am J Phys Anthropol. 2000 May;112(1):39-48.
14. Gilbert BM, McKern TW. A method for aging the female Os pubis. Am J Phys Anthropol. 1973 Jan;38(1):31-8.
15. Haglund WD, Sorg MH. Advances in forensic taphonomy : method, theory, and archaeological perspectives. Boca Raton, Fla. ; London: CRC Press; 2002.
16. Mays S. The archaeology of human bones. London: Routledge; 1998.
17. Mulhern DM, Jones EB. Test of revised method of age estimation from the auricular surface of the ilium. Am J Phys Anthropol. 2005 Jan;126(1):61-5.
18. Schmitt A. Age-at-death assessment using the os pubis and the auricular surface of the ilium: Atest on an identified Asian sample. Int J Osteoarchaeol. 2004 Jan-Feb;14(1):1-6.
19. Lee MM. Problems in combining skeletal age for an individual. Am J Phys Anthropol. 1971 Nov;35(3):395-8.
20. Duyar I, Pelin C. Body height estimation based on tibia length in different stature groups. Am J Phys Anthropol. 2003 Sep;122(1):23-7.
21. Jantz RL. Modification of the Trotter and Gleser female stature estimation formulae. J Forensic Sci. 1992 Sep;37(5):1230-5.
22. Lundy JK. The mathematical versus anatomical methods of stature estimate from long bones. Am J Forensic Med Pathol. 1985 Mar;6(1):73-6.
23. Mall G, Hubig M, Buttner A, Kuznik J, Penning R, Graw M. Sex determination and estimation of stature from the long bones of the arm. Forensic Sci Int. 2001 Mar 1;117(1-2):23-30.
24. Meindl RS, Lovejoy CO, Mensforth RP, Don Carlos L. Accuracy and direction of error in the sexing of the skeleton: implications for paleodemography. Am J Phys Anthropol. 1985 Sep;68(1):79-85.
25. Ozaslan A, Iscan MY, Ozaslan I, Tugcu H, Koc S. Estimation of stature from body parts. Forensic Sci Int. 2003 Mar 12;132(1):40-5.
26. Pelin IC, Duyar I. Estimating stature from tibia length: a comparison of methods. J Forensic Sci. 2003 Jul;48(4):708-12.
27. Knussmann RE. Anthropologie : Handbuch der Vergleichenden Biologie des Menschen. Stuttgart:

Gustav Fischer; 1988.

28.Siegel JA, Knupfer GC, Saukko P. Encyclopedia of forensic sciences. San Diego, Calif. ; London: Academic; 2000.

29.Kelley MA. Phenice's visual sexing technique for the os pubis: a critique. Am J Phys Anthropol. 1978 Jan;48(1):121-2.

30.Phenice TW. A newly developed visual method of sexing the os pubis. Am J Phys Anthropol. 1969 Mar;30(2):297-301.

31.Halcrow SE, Tayles N. Stress near the start of life? Localised enamel hypoplasia of the primary canine in late prehistoric mainland Southeast Asia. Journal of Archaeological Science. 2008 Aug;35(8):2215-22.

32.Reid DJ, Dean MC. Brief communication: the timing of linear hypoplasias on human anterior teeth. Am J Phys Anthropol. 2000 Sep;113(1):135-9.

33.Ritzman TB, Baker BJ, Schwartz GT. A fine line: a comparison of methods for estimating ages of linear enamel hypoplasia formation. Am J Phys Anthropol. 2008 Mar;135(3):348-61.

34.Zinoviev A. To the characteristics of the anthropological collection from an excavation of Spas Vysoky Monastery from middle suburban settlement of the city of Tver. City of Tver, Tver Region and Adjacent Territories during Middle Ages. Tver: TNEER; 2003.